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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,641	02/05/2004	James J. Johnston	6884-14	5776

7590 01/26/2005

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EXAMINER
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FASTOVSKY, LEONID M

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/772,641	<b>Applicant(s)</b> JOHNSTON, JAMES J.	
	<b>Examiner</b> Leonid M Fastovsky	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 November 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) 28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>20040602</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-27, 29-36, drawn to a heating element, classified in class 219, subclass 549.
  - II. Claim 28, drawn to a method of making a heating element, classified in class 29, subclass 611.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a different process that does not include a simultaneous feeding of parts of the heating element.
3. Applicant's election without traverse of Claims 1-27 and 29-36 by Attorney J .Linderman by phone on 1/18/04 is acknowledged.
4. Claim 28 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claim, there being no allowable generic or linking claim. Election was made **without** traverse by Mr. J.Linderman by phone on 1/18/04.
5. Upon further consideration the Election/Restriction of Species filed on 9/10/04 has been withdrawn.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 5, 8, 26, 27 and 35-36 rejected under 35 U.S.C. 103(a) as being unpatentable over Inagaki et al (6,737,586) in view of Goss et al (4,733,059).

Inagaki teaches a flat cable with an axially elongated flat copper or copper alloy heating element 5, and dielectric sheath 1,4 embracing the heating element 5, including a lower layer 1 having an upper face provided with an adhesive layer and bonded to the lower surface of the heating element, and an upper layer 4 having a lower face in direct contact and unconnected to the heating element 5. However, Inagaki does not teach a heating element comprises a carbon fiber. Goss teaches an elongated heating cable with carbon fiber heating elements 20. It would have been obvious to one having ordinary skill in the art to modify Inagaki's invention to include a carbon fiber heating element as taught by Goss in order to make the flat heating cable more durable.

8. Claims 2-16, 19, 21-25 and 29-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itagaki in view of Goss and further in view of McMahon et al (6,045,906) and Sundararaj et al (6,610,7730).

Itagaki in view of Goss teaches substantially the claimed invention, but does not teach the bundle with hundreds or thousands fibers and a diameter of the fiber, separate webs, polyester, Kapton material and resistance of the carbon fiber per linear foot.

McMahon discloses a bundle of carbon fibers ranging from 300 to 300,00 (col. 9, lines 57-65), separate webs (Fig. 1-2), thermoplastic material for the sheath comprising polyester (col. 2, lines 63-67) and Kapton (col. 14, lines 24-39). Sundararaj discloses a carbon fiber with diameter of 7 micron and a resistance of 15000 ohm per square cm (Table 1). It would have been obvious to one having ordinary skill in the art to modify the invention of Itagaki in view of Goss to use a bundle of carbon fiber, separate webs, polyester and Kapton material as taught by McKapton and a diameter and a resistance of the fiber as taught by Sundararaj in order to make the carbon heating element more durable.

9. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Itagaki in view of Goss and further in view of Kochman et al (6,452,138).

Itagaki in view of Goss discloses substantially the claimed invention, but does not disclose coloring to distinguish the layers. Kochman discloses a soft heating element (Fig. 1-2) and thread/fibers 2 can be laminated between color sensitive polymer 15 (col. 11, lines 20-57). It would have been obvious to one having ordinary skill in the art to modify the invention of Itagaki in view of Goss to adopt coloring of layer of polymer as taught by Kochman in order to distinguish it from non-colored.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Itagaki in view of Goss and further in view of Arx et al (6,541,744).

Itagaki in view of Goss discloses substantially the claimed invention, but does not disclose one layer being thicker than another. Arx discloses a heating element 16, a conductive carbon fiber (col. 1, lines 50-57) and one layer-section 14 is thicker than

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another layer-section 12. It would have been obvious to one having ordinary skill in the art to modify the invention of Itagaki in view of Goss to include one layer thicker than another as taught by Arx in order to be more thermally isolative.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 571-272-4778. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Leonid M Fastovsky  
Examiner  
Art Unit 3742

lmf

1/21/05

  
ROBIN O. EVANS  
PRIMARY EXAMINER

1/24/05